

wherein said first insulating layer has an H content of not less than 15.4 atom% in the composition, and has been formed to cover said conductive film.

2. (Amended) A semiconductor device comprising an insulating interlayer formed on a conductive film and including an insulating layer of a composition containing SiH, wherein a threshold [said insulating layer has an SiH content] at which a degassing amount from said insulating layer abruptly decreases upon a slight [change] increase in the SiH content exists in the relation between said SiH content of said insulating layer and said degassing amount from said insulating layer, and
said insulating layer has a SiH content not less than said threshold.

3. (Amended) A device according to claim 1, wherein a contact hole for exposing part of a surface of said conductive film is formed, an interconnection layer electrically connected to said conductive film through said contact hole is formed, [and] said contact hole has a moderately tapered upper wall surface at the portion corresponding to said second insulating layer, and said second insulating layer has a multilayer structure made up from layers of the same material.

7. (Amended) A semiconductor device comprising a semiconductor element formed on a semiconductor substrate, and a multilayered interconnection structure formed over said semiconductor element and electrically connected to said semiconductor element, wherein said multilayered interconnection structure is an interconnection structure of at least two layers in which a conductive film or a lower interconnection layer and an upper interconnection

layer formed on an insulating interlayer are electrically connected through a contact hole formed in said insulating interlayer,

said insulating interlayer includes an insulating layer of a composition containing SiH, [and] [said insulating layer has an SiH content] a threshold at which a degassing amount from said insulating layer abruptly decreases upon a slight increase in the SiH content exists in the relation between said SiH content of said insulating layer and said degassing amount from said insulating layer, and

said insulating layer has a SiH content not less than said threshold.

8. (Amended) A semiconductor device comprising a semiconductor element formed on a semiconductor substrate, and a multilayer interconnection structure formed over said semiconductor element and electrically connected to said semiconductor element,

wherein said multilayered interconnection structure is an interconnection structure of at least two layers in which a conductive film or a lower interconnection layer and an upper interconnection layer formed on an insulating interlayer are electrically connected through a contact hole formed in said insulating interlayer,

said insulating interlayer includes [an] a first insulating layer of a composition containing SiH, and a second insulating layer formed on said first insulating layer, and

said first insulating layer has an H content of not less than 15.4 atom% in the composition, and has been formed to cover said conductive film on the lower interconnection layer.

9. (Amended) A insulating film formed on a conductive film and including an insulating layer of a composition containing SiH,

A2
Cancel
~~[said insulating layer having an SiH content] wherein a threshold at which a degassing amount from said insulating layer abruptly decreases upon a slight increase in the SiH content exists in the relation between said SiH content of said insulating layer and said degassing amount from said insulating layer, and~~

~~said insulating layer has a SiH content not less than said threshold.~~

Please add new claim 20 as follows:

A3
--20. A device according to claim 8, wherein a contact hole for exposing part of a surface of said conductive film is formed, an interconnection layer electrically connected to said conductive film through said contact hole is formed, said contact hole has a moderately tapered upper wall surface at the portion corresponding to said second insulating layer, and said second insulating layer has a multilayer structure made up from layers of the same material.

REMARKS

Claims 1-9 and 11-20 are pending. The specification is amended to correct a minor informality. Claims 1-3 and 7-9 are amended. Claim 10 is canceled and new new claim 20 is added.

Applicants affirm the election of claims 1-10.

Claims 2, 3, 7 and 9 were rejected under 35 USC §112, second paragraph, as being indefinite. The claims have been clarified in regard to the degassing amount. More specifically, the present invention was made based on the finding that in the relation between the hydrophobic SiH content of an HSQ film and the degassing amount from the HSQ film, there is a threshold at which the degassing amount steeply changes with the SiH content changing. The claimed invention has an